APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,035	12/30/2003	Jaroslaw Sydir	Intel-014PUS	9234

7590 12/18/2007

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EXAMINER
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ART UNIT	PAPER NUMBER
2135	

MAIL DATE	DELIVERY MODE
12/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/749,035	SYDIR ET AL.
	Examiner	Art Unit	
	Nirav Patel	2135	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>20 September 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21 and 23-28* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21 and 23-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment filed on Sep. 20, 2007 has been entered. Claims 1-21 and 23-28 are pending.

2. The Office would like to notify the Applicant that there has been a change in Examiner to conduct the future examination and prosecution processes of the currently pending application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 5-8, 21, 23-25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) and in view of Vandenhoudt et al (US Pub. No. 2003/0002509).

As per claim 1, Elnathan teaches:

network processor (nPcores), which performs various transformations on the packet data, and a switch fabric [Fig. 1, col. 3 lines 50-63]; wherein the buffer provides data to the switch fabric [Fig. 1-3].

Krishna teaches:

a crypto system; an alignment buffer to receive header data and ciphered data from the crypto system, the crypto system encrypting data to form ciphered data so that an intended receiver with a correct cryptographic key may decrypt the ciphered data [Fig. 4, col. 5 lines 30-37, 51-67, col. 6 lines 1-3, Fig. 5, Fig. 6, col. 7 lines 63-67, col. 8 lines 1-11]. Krishna teaches the alignment buffer provides data in blocks having a predetermined size [col. 6 lines 1-3, col. 5 lines 30-67, Fig. 4].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Krishna with Elnathan, since one would have been motivated to improve performance of the cryptography operation [Krishna, col. 1 lines 66-67, col. 2 line 1] by enabling "cell-based" processing of random-length IP packets [Krishna, col. 3 lines 6-23].

Vandenhoudt teaches:

a switch fabric having a plurality of transmit buffer elements to receive data from the buffer [Fig. 1, 2, 4 paragraph 0023].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Vandenhoudt with Elnathan and Krishna, since one would have been motivated to provide scalable switch fabric without compromising its robustness under high traffic loads [Vandenhoudt, paragraph 0003 lines 6-10, paragraph 0006].

As per claim 2, the rejection of claim 1 is incorporated and Vandenhoudt teaches:

an interface to transmit data from the switch fabric [Fig. 4].

As per claim 5, the rejection of claim 1 is incorporated and Krishna teaches:

the crypto system includes first and second crypto units [Fig. 4, 5].

As per claim 6, the rejection of claim 1 is incorporated and Krishna teaches:

the crypto system includes a predetermined number of crypto unit processing contexts

and the alignment buffer includes a buffer element for each of the predetermined

number of processing contexts [Fig. 4, 5].

As per claim 7, the rejection of claim 1 is incorporated and Krishna teaches:

the crypto system includes a plurality of cipher cores [Fig. 4, 5].

As per claim 8, the rejection of claim 1 is incorporated and Krishna teaches:

the plurality of cipher cores correspond to a plurality of cipher algorithms [Fig. 4, 5].

As per claim 21, it encompasses limitations that are similar to limitations of claim 1.

Thus, it is rejected with the same rationale applied against claim 1 above.

As per claim 23, the rejection of claim 21 is incorporated and it encompasses limitations

that are similar to limitations of claims 7 and 8. Thus, it is rejected with the same

rationale applied against claims 7 and 8 above.

As per claim 24, the rejection of claim 21 is incorporated and Krishna teaches:

the device includes a router [col. 1 lines 27-30].

As per claim 25, it encompasses limitations that are similar to limitations of claim 1.

Thus, it is rejected with the same rationale applied against claim 1 above.

As per claim 27, the rejection of claim 25 is incorporated and it encompasses limitations

that are similar to limitations of claim 7. Thus, it is rejected with the same rationale

applied against claim 7 above.

As per claim 28, the rejection of claim 25 is incorporated and it encompasses limitations

that are similar to limitations of claim 24. Thus, it is rejected with the same rationale

applied against claim 24 above.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan

et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in

view of Vandenhoudt et al (US Pub. No. 2003/0002509) and in view of Chiang (US Pub.

No. 2003/0196132).

As per claim 3, the rejection of claim 2 is incorporated and Vandenhoudt teaches an

interface [Fig. 4].

Chiang teaches the interface includes a SPI4 type interface [Fig. 3].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to combine Chiang with Elnathan, Krishna and Vandenhoudt,

since one would have been motivated to provide a mechanism in a network device that

allows for data lines to be deskewed and monitor the skewing of data in the bus

[Chiang, paragraph 0006].

5.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan

et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in

view of Vandenhoudt et al (US Pub. No. 2003/0002509) and in view of "Network

Processing Forum – Streaming Interface (NPSI) Implementation Agreement" 2002

(hereinafter "NPF").

As per claim 4, the rejection of claim 2 is incorporated and Vandenhoudt teaches an

interface [Fig. 4].

"NPF" discloses: the interface includes a NPSI type interface [Fig. 3].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time

the invention was made to combine "NPF" with Elnathan, Krishna and Vandenhoudt,

since one would have been motivated to provide a standard interface for connecting

network processing devices ["NPF" page 1, 1.2].

6. Claims 9, 10, 12 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) and in view of Kanai et al (US Patent No. 6,341,335).

As per claim 9, Elnathan teaches:

network processor (nPcores), which performs various transformations on the packet data, and a switch fabric [Fig. 1, col. 3 lines 50-63]; wherein the buffer provides data to the switch fabric [Fig. 1-3].

Krishna teaches:

storing a portion of a packet header in an alignment buffer that has a first storage size; storing a first portion of a first data block of ciphered data from the at least one crypto unit in the alignment buffer, the at least one crypto unit encrypting data for form the ciphered data so that an intended receiver with a correct cryptographic key may decrypt the ciphered data [Fig. 4, col. 5 lines 30-37, 51-67, col. 6 lines 1-3, Fig. 5, Fig. 6, col. 7 lines 63-67, col. 8 lines 1-11]. Krishna teaches the alignment buffer provides the ciphered data in blocks having a predetermined size and transmits the ciphered data [col. 6 lines 1-3, col. 5 lines 30-67, Fig. 4].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Krishna with Elnathan, since one would have been motivated to improve performance of the cryptography operation [Krishna, col. 1 lines

66-67, col. 2 line 1] by enabling "cell-based" processing of random-length IP packets [Krishna, col. 3 lines 6-23].

Vandenhoudt teaches:

transmitting the data from the buffer to a first buffer element in a switch fabric interface unit; transmitting further data block of the data from the buffer to the first buffer element unit, allocating a second buffer element in the switch fabric interface unit; and transmitting the data in the buffer to the second buffer element [Fig. 1, 2, 4 paragraph 0023, 0036, 0043, 0045, 0054, 0057].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Vandenhoudt with Elnathan and Krishna, since one would have been motivated to provide scalable switch fabric without compromising its robustness under high traffic loads [Vandenhoudt, paragraph 0003 lines 6-10, paragraph 0006].

Krishna teaches dividing the packet to 64 bytes (i.e. fixed size cell) and storing the fixed sized cell (64 bytes) into the FIFO buffer [Fig. 4, 5].

Kanai teaches: transmitting further data to the buffer element unit until the buffer element is full [col. 9 lines 13-25].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Kanai with Elnathan, Krishna and Vandenhoudt, since one would have been motivated to prevent reduction of an effective system bus performance caused by an increase in the access latency [Kanai, col. 3 lines 24-26].

As per claim 10, the rejection of claim 9 is incorporated and Krishna teaches:

transmitting data from the at least one crypto unit to a selected one of a plurality of

elements in the alignment buffer [Fig. 4, 5].

As per claim 12, the rejection of claim 9 is incorporated and Vandenhoudt teaches:

transmitting the ciphered data from switch fabric interface unit over an interface [Fig. 4,

1].

As per claim 17, the rejection of claim 9 is incorporated and Vandenhoudt teaches:

transmitting the ciphered data to the second buffer element in an amount less than the

predetermined number of bytes for an end of packet [paragraph 0057].

7. Claims 11, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No.

6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) in view of Kanai

et al (US Patent No. 6,341,335) and in view of Noehring et al (US Pub. No.

2002/0188839).

As per claim 11, the rejection of claim 9 is incorporated and Noehring teaches:

the alignment buffer includes a number of buffer elements corresponding to a number of

processing contexts for the at least one crypto unit [Fig. 3, paragraph 0035 lines 7-9].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Noehring with Elnathan, Krishna, Vandenhoudt and Kanai, since one would have been motivated to achieve high-speed security for IP networks [paragraph 0001 line 5].

As per claim 15, the rejection of claim 9 is incorporated and Noehring teaches: transmitting the ciphered data from the alignment buffer in an amount that is a multiple of a predetermined number of bytes [paragraph 0034, 0039, 0063].

As per claim 16, the rejection of claim 15 is incorporated and Noehring teaches: the predetermined number of bytes is 16 [paragraph 0034].

8.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) in view of Kanai et al (US Patent No. 6,341,335) and in view of Chiang (US Pub. No. 2003/0196132).

As per claim 13, the rejection of claim 12 is incorporated and Vandenhoudt teaches an interface [Fig. 4].

Chiang teaches the interface includes a SPI4 type interface [Fig. 3].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Chiang with Elnathan, Krishna, Vandenhoudt and

Kanai, since one would have been motivated to provide a mechanism in a network device that allows for data lines to be deskewed and monitor the skewing of data in the bus [Chiang, paragraph 0006].

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) in view of Kanai et al (US Patent No. 6,341,335) and in view of "Network Processing Forum – Streaming Interface (NPSI) Implementation Agreement" 2002 (hereinafter "NPF").

As per claim 14, the rejection of claim 9 is incorporated and Vandenhoudt teaches an interface [Fig. 4].

"NPF" discloses: the interface includes a NPSI type interface [Fig. 3].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine "NPF" with Elnathan, Krishna, Vandenhoudt and Kanai, since one would have been motivated to provide a standard interface for connecting network processing devices ["NPF" page 1, 1.2].

10. Claims 18 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) and in view of Noehring et al (US Pub. No. 2002/0188839).

As per claim 18, Elnathan teaches:

network processor (nPcores), which performs various transformations on the packet data, and a switch fabric [Fig. 1, col. 3 lines 50-63]; wherein the buffer provides data to the switch fabric [Fig. 1-3].

Krishna teaches:

first and second crypto units each having and predetermined number of processing contexts, the first and second crypto units encrypting data to form ciphered data so that an intended receiver with a correct cryptographic key may decrypt the ciphered data [Fig. 4, col. 5 lines 30-37, 51-67, col. 6 lines 1-3, Fig. 5, Fig. 6, col. 7 lines 63-67, col. 8 lines 1-11]. Krishna teaches the alignment buffer receive the ciphered data from the first and second crypto units [col. 6 lines 1-3, col. 5 lines 30-67, Fig. 4, 5].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Krishna with Elnathan, since one would have been motivated to improve performance of the cryptography operation [Krishna, col. 1 lines 66-67, col. 2 line 1] by enabling "cell-based" processing of random-length IP packets [Krishna, col. 3 lines 6-23].

Vandenhoudt teaches:

a switch fabric interface unit having a plurality of transmit buffer elements to receive data from the buffer in an amount that is multiple of a predetermined number of bytes and an interface to transmit the ciphered data from the switch fabric [Fig. 1, 2, 4 paragraph 0023, 0036, 0041].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Vandenhoudt with Elnathan and Krishna, since one would have been motivated to provide scalable switch fabric without compromising its robustness under high traffic loads [Vandenhoudt, paragraph 0003 lines 6-10, paragraph 0006]. ·

Noehring teaches:

the alignment buffer having a respective element for each of the plurality of processing contexts to receive the ciphered data form the first and second crypto unit; [Fig. 3, paragraph 0035 lines 7-9]. Further, Noehring teaches crypto units each having a plurality of cipher core [Fig. 3] and the buffer elements to receive data in an amount that is multiple of a predetermined number of bytes [paragraph 0034].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Noehring with Elnathan, Krishna and Vandenhoudt, since one would have been motivated to achieve high-speed security for IP networks [paragraph 0001 line 5].

As per claim 26, the rejection of claim 25 is incorporated and Noehring teaches:

the crypto system includes a predetermined number of crypto unit processing contexts and the alignment buffer includes a buffer for each of the predetermined number of processing contexts [Fig. 3, paragraph 0035 lines 7-9].

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) and in view of Chiang (US Pub. No. 2003/0196132).

As per claim 19, the rejection of claim 18 is incorporated and Vandenhoudt teaches an interface [Fig. 4].

Chiang teaches the interface includes a SPI4 type interface [Fig. 3].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Chiang with Elnathan, Krishna and Vandenhoudt, since one would have been motivated to provide a mechanism in a network device that allows for data lines to be deskewed and monitor the skewing of data in the bus [Chiang, paragraph 0006].

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Elnathan et al (US Patent No. 7,245,616) in view of Krishna et al (US Patent No. 6,477,646) in view of Vandenhoudt et al (US Pub. No. 2003/0002509) and in view of "Network Processing Forum – Streaming Interface (NPSI) Implementation Agreement" 2002 (hereinafter "NPF").

As per claim 20, the rejection of claim 18 is incorporated and Vandenhoudt teaches an interface [Fig. 4].

"NPF" discloses: the interface includes a NPSI type interface [Fig. 3].

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine "NPF" with Elnathan, Krishna and Vandenhoudt, since one would have been motivated to provide a standard interface for connecting network processing devices ["NPF" page 1, 1.2].

Response to Amendment

13. Applicant's amendment filed on Sep. 20, 2007 has been fully considered and is persuasive. Therefore, previous rejection has been withdrawn. See a new ground(s) of rejection above.

Note: In response to applicant's request for the telephonic interview as mentioned in the amendment dated on 09/20/2007, Examiner has attempted to contact the applicant's representative dated on 12/4/07 prior to mailing of the office action.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Milliken et al (US 2003/0091036) – Execution unit for a network processor

Candelore et al (US 6061449) -- Secure processor with external memory using block chaining and block re-ordering

Oelke et al (US 2003/0200330) – System and method for load-sharing computer network switch

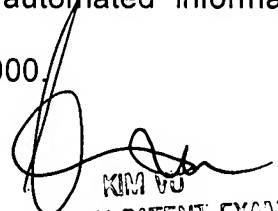Allen, Jr. et al (US 6868082) – Network processor interface for building scalable switching systems

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirav Patel whose telephone number is 571-272-5936. The examiner can normally be reached on 8 am - 4:30 pm (M-F).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NBP

12/6/07

KIM VU
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